at præcipuè in Veſicularum ejus oris ac limbis ſitum eſt, à quo omnibus cellulis, imò & ipſi tunicæ ſuccingenti, capillaribus ac ferè inviſibilibus ramuſculis proſpicit.

Animalia, quæ ſuſpicor eandem cum Ranis Pulmonis ſtructuram obtinere, ſunt Bufones, Lacertæ, Serpentes, Chamæleontes, Teſtudines, Salamandræ aquaticæ, *& ſi quæ ſunt alia pulmonibus Membranoſis inſtructa; quorum ſtructuram mihi nondum licuit perquirere. Suffecerit jam indicaſſe animalia, Viriſque me longè ſagacioribus viam monſtraſſe.*

Cùm videam vobis grata fuiſſe, quæ de Naſi-cornis Scarabæi genitalibus nota veram, non alienum fore duxi eorum delineationem Cl. Tuæ tranſmittere; in qua imprimis exhibentur non modò Teſticuli ex unico funiculo, duos pedes & ſex pollices longo; ſed & Vaſa Deferentia, ſemen copioſum ac album, quando læduntur, ſtillantia; nec non veſiculæ ſeu potius glandulæ ſeminales ſex, admodum elegantes; glandularumq; ſeminalium ductus protenſi, materiam ſeminalem ſub-flavam (ut in hominibus ac brutis quoq; obſervatur) continentes.

An Accompt of ſome Books.

I. *LA STATIQUE, ou* La Science des Forces Mouvantes, *par le* P. Ignace Gaſton Pardies, *de la Compagnie de Jeſus.* A *Paris*, 1673. *in* 12°.

THE Learned Author of this Book had propoſed to himſelf to write a whole Body of *Mechanicks*, ſuch an one, as might be accommodate to ordinary Capacities; he conceiving, that there had not been extant hitherto a compleat ſyſtem of that Science, or, if there had, it did exceed the reach of moſt Readers: which latter he thinks to be the Character due to Dr. *Wallis* his Three Tomes *de Motu & Mechanice*, of which we gave an Account N°. 54. p. 1086. N°. 61. p. 2005. N°. 76. p. 2286.

But ſince the publication of this part of it, we underſtand that he hath been prevented and cut off by an intimely Death; being regretted by thoſe that knew his frankneſs and ſtrong inclinations to promote philoſophical knowledge. How far he hath indeed advanced thoſe other parts of this Deſign, and, whe-

whether thoſe of his Society, in caſe he hath made a good progreſs therein, will take care to ſee it publiſht, we know not; but yet hope, *He* hath gone a good way therein, and, if ſo, that his Companions will not ſuppreſs his labors, for the benefit of young Students in this kind of knowledge.

Concerning the *whole Deſign*, the Author (as appears by the *Preface* to this part of it) had ſo contrived it as to make it up of *Six* parts.

The *firſt* is of *Local motion*, already publiſhed by him, though he thought not fit to prefix his Name to that part, in the year 1670. in *French*, and Engliſh the ſame year; deſcribed in *Numb.* 65. p. 2010.

The *ſecond* is this very Diſcourſe, entituled as above; which treats of ſuch Motions, as are performed with Violence, by ſurmounting the Reſiſtance that is made from elſewhere. Here, beſides the Demonſtration given of all thoſe Moving Engins, whoſe force may be reduced to that of the *Ballance*, ſome reflexion is made on the Impoſſibility of the *Perpetual Motion*. Beſides, the Author treats of Bodies ſuſpended, faſtned at one or both Ends; of the manner how they are broken; of the figure they take in becoming curve; and particularly of the Caſes, where Cords extended will be Parabolical, Hyperbolical, Elliptical, or Circular. More-over, he examins the force of Towers and Pyramids, and ſhews in what part they are weakeſt; he determins the figures they ought to have to render them perfect and able every where to reſiſt equally to the violence of Winds; delivers General Rules of the Reſiſtance of bodies, and teaches the way of applying thoſe general rules to particular caſes, relating to Architecture and other effects of Nature and Art: And taking an Example of the motion of a *Ship*, he obſerveth the uſe that may be made therein of the Rules of Mechanicks.

By the by, having made mention in the *Preface* of the uniform motion in a *Cycloid*, he gives us his way of demonſtrating this Uniformity, to ſee, whether, when M. *Hugens* ſhall have publiſht his demonſtration, he be ſo fortunate as to concur with him in it.

As for the other *four* parts, (which his Death, 'tis feared, will

will deprive us of,) they ſhould have contained, as he intimates in the ſame *Preface*, the following particulars:

The *firſt* of them, the Motion of *Heavy* bodies; ſhewing all the proprieties of this motion, whether it be that the Bodies deſcend by their own weight, or are mov'd by ſome pulſion of violence. Where he would give the reaſon of that admirable augmentation and diminution of the Celerity of bodies, that paſs in their aſcent and deſcent through all the imaginable degrees of Tardity. On which occaſion he would have diſcourſed, that *Galilei* hath not ſhew'd thoſe proprieties but by ſuppoſing a Definition which is conteſted; and that *Baliani* undertook to give an other Progreſſion to the Motion of thoſe Bodies. Which two Authors having had their reſpective abettors, and whole Volumes of conteſtations having been written about it between *Gaſſendus* and *Cazre*, the whole buſineſs ſeemed to have been determined by three great Geometricians; M. *Hugens* and the P. *de Billy* having demonſtrated, that the Progreſſion of *Baliani* was impoſſible; and M. *Fermat* having ſhew'd, that there would need no leſs than a whole eternity for a Body that ſhould, with this proportion of celerity, deſcend the height of one only foot. Whereupon the Learned ſeemed to have yielded to ſuch regular demonſtrations: But it appears, that P. *Lalouvera* ſurvening made it out, that notwithſtanding all thoſe demonſtrations, the Progreſſion of *Baliani* was very poſſible and very natural; the manner wherewith he maintained it, having appeared ſo fair, that M. *Fermat* himſelf was never able to gainſay it. All which the Author would have delivered in this *firſt* of the *four* remaining parts, and ſhew'd, that that firſt weight, or that determined degree of celerity, on which *Lalovera's* demonſtration is grounded, cannot ſubſiſt. Where alſo ſhould have been explained, not only a Progreſſion altogether like it, found in the Motion of an Arm or Foot, or of Inſtuments which we hold when we ſtrike; but alſo an other kind of Progreſſion, ſuch as we find in Canon-bullets, or in Arrows ſhot with a Craſs-bow. To all which he would have added in the ſame part an examination of the motion made upon *Inclined* Superficies; where would have occur'd the demonſtration, made alſo by

M.

M. Hugens, of that important propoſition, touching the motion made in a Cycloid.

The *ſecond* of them, would have conſiſted of the Motion of *Liquids*; where he would not only have demonſtrated all the *phænomena* of the Celerity of Liquors, of the Force of their Preſſure, of the Direction and Figure they take in their Jets, Courſe, and Equal Poiſe; but alſo comprehended the whole Science of *Pneumatiques*, (ſince Air is a liquid;) the force of Springs, Rarefaction and Condenſation, and the ſtrange Violence of Gun powder kindled, and all the new Experiments of the *Vacuum*, and the reaſon of all thoſe ſurpriſing Effects obſerved in them.

The *third* would have treated of the motion of *Vibration*. Where he would have deſcribed a *Pendulum* having all its vibrations ſynchronous, together with a demonſtration, *that* all Vibrations of a cord extended do laſt equally long; *that* the Vibrations of two cords of an equal thickneſs and tenſion are in a reciprocal proportion of the Length of the cords, whereas in *Pendulums* they are only in a ſub-duplicate proportion; *that* in equal cords the Vibrations are in a ſub-duplicate proportion of the forces or weights that make them tenſe; *that* the Vibrations are likewiſe in a ſub-duplicate proportion of the thickneſs of the cords equally long and equally tenſe. And ſo he would have demonſtrated by the Cauſes, what ever hath been obſerved by Experience in Sounds and in the Harmony of tenſe Bodies.

The *fourth* would have diſcourſed of the Motion of *Undulation*, taking for an Example thoſe Circles that are made on the ſurface of the water upon the throwing in of a ſtone. Where alſo would have been conſidered ſome Circles like the former, ſuch as may be formed in the Air, and even in ſome other more ſubtile Bodies, which manifeſt experiments evince to be ſpred every-where. And of ſuch Circles he would have examined, how they may be formed, how their motion is communicated, what are the lines of their direction, with what force they may act near or far off, how they may reflect and refract. Further, ſuppoſing that *Sound* hath for its vehicle this kind of motion in the Air, he would have explained all

what

what concerns *Sounds*; and making a Conjecture about the propagation of *Light*, he would have diſcuſſed, whether it might not be ſuppoſed, that *Light* hath for its vehicle ſome ſuch motion in an Air more ſubtile; and ſhew'd, that indeed in this *Hypotheſis* all the proprieties of *Light* and *Colours* might be explicated in a very natural way, without which it would not be done but with great difficulty.

This is the whole Deſign, drawn up by the Author; in which he intended, as he ſaith in this piece, to have interſperſed divers curious and uſeful practiſes of Art, and many demonſtrations giving light for the deciſion of ſeveral conſiderable Queſtions in Natural Philoſophy.

II. *Antonii le Grand* HISTORIA NATURÆ. Londini, *apud* J. Martyn, *R. Societ. Typographum, ad Inſigne Campanæ in Cæmeterio D.* Pauli, *A.* 1673. *in* 8°.

THE Learned Author of this Book, deſirous to ſhew, that even the common and obvious *phænomena* of Nature can be very congruouſly explained and accounted for by thoſe Principles he hath formerly laid down, and publiſhed A 1672. under the Title of *Inſtitutio Philoſophiæ*, deſcribed in *Numb.* 80. of theſe Tracts; maketh it his buſineſs in this Treatiſe, to paſs, for that purpoſe, through the whole Body of Phyſiology, and in ſo doing to ſupply in due places what he hath omitted in the ſaid Inſtitution.

This he performeth in *Nine* ſeveral parts, into which he thought fit to divide his Book;

In the *firſt* of which he treats of the *Nature* of *Bodies* in general: Where he endeavors, *to* diſprove all Vacuity in Bodies; *to* refute the Arguments and Experiments alledged to aſſert a vacuum; and *to* explain the Proprieties and Affections of Bodies, as Indefinit Diviſibility, Rarity and Denſity, Hardneſs and Fluidity, Roughneſs and Smoothneſs, Perſpicuity and Opacity; alledging various Experiments concerning all theſe, and aſſigning Reaſons for them.

In the *Second*, he undertaketh to explain the true Nature of the *Qualities* of Bodies by Experiments, and to make it

out

out, that even thoſe, that are commonly called *Occult*, may be explicated by Motion, Figure, Pores and Texture: where he diſcourſeth at large of Heat, Cold, Gravity, Levity, Taſte, Smell, Sound, Light, Colour, *&c.*

In the *third*, he delivers the Hiſtory of the *Univerſe*, and particularly of the *Heavens*, and the Stars, Planets, Comets; together with his Opinion concerning their Influences upon the Bodies here below.

In the *fourth*, he diſpatches the Explication of thoſe *four great Maſſes* of the Sublunary World, the Earth, Water, Fire, and Air. About the *Earth* he examins its Poſition and Suſpenſion in the Air, and its Magnetical vertue. Of the *Water*, he conſiders its proprieties, the Origin of Rivers and Fountains, and the Cauſe of the Flux and Reflux of the Sea. Of the *Fire*, he diſcourſeth of its various Effects both above and under ground; Concluding this part with the Conſideration of the great Power of the *Air* both in Natural and Artificial things.

In the *fifth*, he examins *Foſſils*, Mettals, Fluors, Salts, Stones, delivering his opinion about their origine, and diſcourſing amply of the *Magnet* in particular, aſſigning with *Des Cartes* the cauſe of the various *phænomena* thereof to be the paſſage of the *Materia ſtriata* through the pores thereof.

In the *ſixth*, he explains the doctrine of *Meteors*, Vapors, Exhalations, Winds, Rain, Hail, Snow, Dew, Thunder, Lightning, the Rainbow, *&c.*

In the *ſeventh*, he treateth of *Plants*, their variety, parts, qualities and vertues, vegetation, nutrition, decay, *&c.*

In the *eighth*, he giveth an account of *Animals*, of ſpontaneous and ſeminal generation, of the cauſe of Monſters, and of the different times obſerved in Animals for their bringing forth: To which he adds the various Affections of them, the Circulation of the Blood, Hunger and Thirſt, Hatred and Love, Sleep and Waking, Infirmities and Diſeaſes, *&c.*

In the *ninth* and laſt, he delivers the doctrine of *Man* in particular, adſcribing to him, excluſively to Brutes, *Cogitation*, and aſſerting, that though Man, like other Animals, makes uſe of the like Organs of Senſe with them, yet he doth not in that manner, as they do, perceive Objects, in regard that Senſe in Man is *Cogitation*, which, in his judgment, belongs not to Brutes. Whereupon he gives here an account of divers Experiments about the Touch, Taſt, Smell, Hearing and Seeing; treating afterwards of Imagination and Memory, and explicating alſo the Cauſe of Dreams, and of the Paſſions, Propenſions and Averſions in Man.

III. *The Deſcription and Uſe of Two* ARITHMETICK INSTRUMENTS, *&c. By* S. Moreland. *Printed in* London, 1673. *in* 12°.

THE Ingenious Author of this Book, having ſome years ſince contrived two Inſtruments, whereof the one is for Addition and Subtraction, the other for Multiplication; gives us here *both* a Deſcription of the parts and Structure of theſe Inſtruments, *and* the way and manner of Uſing them: affirming withall, that the latter of theſe Inſtruments alone is alſo of excellent Uſe in *Diviſion*, as likewiſe in Extracting the Square, Cube, and Square-Square-Roots; and likewiſe that, if any Curious perſon will go to the Expence, the *Adding* Inſtrument, being Joyned to the *Multiplying*, performs all the four Species of Arithmetick, and the Extraction of the ſaid Roots, without the help of Pen and Ink, or expoſing the Operator to any difficulty or uncertainty.

But for the better underſtanding of theſe Inſtruments, he endeavours ſo to explain and demonſtrate the reaſon of the Operations of the ſaid four *Species*, and Extraction of Roots, as to render them plain and eaſie to the meaneſt capacities: Annexing thereunto, in ſhort, the Doctrin of Proportions, Arithmetical, Geometrical, and Muſical; as alſo the whole Intrigue of the *Golden Rule*.

Which done, he teaches, 1. The Diameter of any Circle being given in *Integers*, to find the *Periphery*, and the *Square-root* of the *Area*, *in infinitum*, without the help newly mention'd.

Next, he giveth us his *Perpetual Almanack*, together with an Explanation thereof, dividing that Almanack into three diſtinct Tables, which make the Uſe thereof obvious to all that ſhall take notice of his directions and exemplifications.

Further, he ſubjoineth a Table for the ready finding, what Sign the *Moon* is in, or ſhall be for ever, together with the Uſe thereof: As alſo a Table ſhewing the Time of the Moon's coming to the *South*, and Quantity of her ſhining; with directions how to uſe the ſame.

To theſe he adds a *Tyde-Table* and its Uſe, for certain Havens in and about *England*; whereby may be known, what *Moon* maketh a *Full Sea* in any of ſuch places, and how many hours and minuts are to be added to the time of the Moons coming to the *South* for the time of *High-water*.

More-over, he ſets down the Time of the *Suns* Riſing and Setting throughout the whole year; and furniſhes us *both* with a Table, ſhewing the Length of the longeſt Artificial Day in all places from the Equinoctial to the Poles of the World; *and* with other Tables readily diſcovering the exact time of the *New* and *Full Moon*, as likewiſe the firſt and ſecond *Quadrats*, and conſequently her true Age, from the year 1673 to 1700.

All

All which is concluded with an Advice touching the *Poasts* and *Roads*, ſaid to be done more exactly than hath hitherto been publiſhed; and with a Table, carefully comparing Forrain *Weights* and *Meaſures* with the *Engliſh*, by the induſtry of Sir *Jonas Moor* Knight.

IV. *A Brief Account of ſome Travels in* Hungaria, Servia, Bulgaria, Macedonia, Theſſaly, Auſtria, Styria, Carinthia, Carniola, Friuli, *&c. By* Edward Brown *M.D. of the Colledge of* London, *Fellow of the* R. Society, *and Phyſ. in Ordinary to his Majeſtie.* London, *in* 4°.

THis Learned and Inquiſitive Traveller gives ſo good an Accompt of the Voyages he made through thoſe parts named in the Title, that thereby he excellently inſtructs others what great benefit may be made by Travelling, if performed with curioſity and Judgment.

In our Account of it we ſhall paſs by the Obſervations made of the Polity, Oeconomy, Manners and Cuſtoms of the reſpective Inhabitants of thoſe Countries, as not properly belonging to our task; and obſerve only what is Phyſiological, and may contribute to the enlargement of the Hiſtory of Nature: In reference to which, we cannot but take notice, amongſt many other, of theſe particulars following;

1. Of the ſhining Mountain of *Cliſſura*, (one of the ſpurs of Mount *Hæmus*,) and that of *Pyrlipe* in *Macedonia*, cauſed by the *Muſcovia*-glaſs they abound with.

2. Of Mount *Olympus* being inferior to ſome parts of the *Alpes* in hight; Clouds alſo being ſeen *above* it.

3. Of the natural Productions of *Theſſaly*, and in particular of the Plants growing there; among which is the *Ilex coccifera*, the Excretion whereof ſerves for dying and making the Confection of *Alchermes*.

4. Of a kind of Chalk at *Banca* in *Hungary*, which is of all colours, except green, and the colours ſo finely mixed, as Marble-paper doth not equal it.

5. Of the principal Mines of *Hungary*; as the *Silver*-mines at *Schemnitz*, 70 fathoms deep; abounding alſo with *Cinnaber*, *Cryſtals*, *Amethyſts* and *Vitriol* naturally cryſtallized in the Earth: The *Gold*-mines at *Cremnitz*, about 9 or 10 Engliſh miles in length, of the depth of 170 fathoms; containing alſo Vitriol of divers colours, white, red, blue and green; and Vitriolate waters: Beſides a neighbouring Vitriol-mine, about 80 fathoms deep: The *Copper*-mines at *Newſol* and *Herren-ground* containing very rich ore, and divers ſorts of Vitriol and Springs of a Vitriolat water changing Iron into Copper: The *Salt*-mine at *Eperies* of great note, about 180 fathoms deep, yielding pieces of Salt of ten thouſand pound weight.

In the deſcription of all which Mines our Author delivers very particularly not only the ſituation, depth, damps, waters, quantities, goodneſs and richneſs of Ore; but alſo the wayes uſed by the Inhabitants of reducing their Ores into Metals, *&c.* All which would be too large to particulariſe in this place.

6. Of the many natural Hot-baths of *Hungary*, as at *Banca*, *Glaſhitten*, *Eiſenbach*, *Stubn*, *Boinitz*.

7. Of the conſiderable Baths of *Auſtria*, eſpecially thoſe at *Baden*, 4 German miles from *Vienna*; deſcribed, at large alſo from our Authors communications, in *Numb.* 59. of theſe Tracts.

8. Of a Strange Lake of *Zirchnitz* in *Carniola*, very curiouſly deſcribed.

9. Of the conſiderable Quickſilver-mines at *Idria*, confirming the Account given of the ſame in *Numb.* 2. of theſe Tracts.

10. Of a ſtony excreſcence upon the Liver of wild Goats, highly commended in Germany for a ſignal remedy againſt malignant diſeaſes and the Plague.

For the particular deſcription of all which, and many more, we muſt refer the curious Reader to the Book it ſelf.

ERRATA in Numb. 93.

Pag. 603. l. 1. r. about *Dyſer.* p. 6015. l. 27. r. *Firre.* p. 6025. l. 7. del. *or Meeter.*

ERRATA in this Numb. 94.

Pag. 6032. l. 28. lege *Globulum ſuſpenſum è funiculo (juſtæ longitudinis;)* theſe words being tranſpoſed in ſome Copies.

LONDON,

Printed for *John Martin*, Printer to the *Royal Society*. 1673.